

## ABSTRACT OF THE DISCLOSURE

In an X-ray imaging apparatus, an optical sensor (phototimer detection unit) corresponding to a conventional photomultiplier is incorporated in a two-dimensional sensor (on a signal line), and a signal from the phototimer detection unit is integrated and monitored, thereby performing exposure control. This makes it possible to incorporate the phototimer detection unit without affecting the aperture ratio of pixels which influence the performance of the X-ray imaging apparatus and the characteristics of a MIS type photoelectric conversion unit, thereby performing proper exposure control.